

**REMARKS**

Claims 27-41 are currently pending in this application. Claims 32-39 are currently withdrawn pursuant to a requirement for restriction. By this response to the non-final Office Action mailed on October 15, 2008, claims 27-30 are amended, and new claims 40 and 41 are added. Claims 40 and 41 find support in, for example, paragraph [0080] of the specification as filed. Support for the amendments is found in the specification, including the claims, as originally filed. No new matter has been introduced. Favorable reconsideration of the application in light of the foregoing amendments and following comments is respectfully solicited.

**Rejection Under 35 U.S.C. § 102**

In section 2 of the Office Action, claims 27-31 were rejected under 35 U.S.C. § 102(b) as being anticipated by U.S. Patent App. Pub. No. 2004/0245534 (Yamada). Applicants respectfully traverse.

In order to anticipate a claim under 35 U.S.C. § 102, a single reference must disclose, explicitly or inherently, each and every claimed limitations. “In relying upon the theory of inherency, the examiner must provide a basis in fact and/or technical reasoning to reasonably support the determination that the allegedly inherent characteristic necessarily flows from the teachings of the applied prior art.” MPEP § 2112(IV) (quoting *Ex parte Levy*, 17 USPQ2d 1461, 1464 (Bd. Pat. App. & Inter. 1990)) (*emphasis in original*). “The fact that a certain result or characteristic may occur or be present in the prior art is not sufficient to establish the inherency of that result or characteristic.” *Id.* (*emphasis in original*). There are a number of claimed

limitations which Yamada does not disclose, and accordingly Yamada fails to anticipate the claimed subject matter.

Claims 27 and 28 each recite that “the first electrode is made thinner than the second electrode.” Regarding this limitation, page 2 of the Office Action asserts that “Yamada discloses . . . electrode 12 is thinner than pad-electrode 14 since electrode 12 is made of Ni/Au while pad electrode 14 is Ni/Ti/Au, having an extra Ti layer,” citing to Yamada, paragraphs [0082] and [0083]. Regarding these features, Yamada, paragraphs [0082]-[0083] states:

. . . the p-electrodes 12 and 12' comprising Ni/Au are formed on the top surface of the p-type contact layer in the exposed portion of the striped ridge. . . .

Next, a pad electrode comprising Ni-Ti-Au (1000 Å-1000 Å -8000 Å) is formed on the p electrode, and the same pad electrodes are also formed on the n-electrode.

As can be seen above, Yamada expressly discloses a thickness of 10000 Å for pad electrode 14, but Yamada does not disclose a thickness for p-electrode 12, either in absolute terms or relative to the thickness of pad electrode 14. Although Yamada states p-electrode 12 “compris[es] Ni/Au” and “pad electrode [14] compris[es] Ni-Ti-Au,” this does not inherently disclose that p-electrode is thinner than pad electrode 14. First, it is well known in patent literature, and would have been understood by the drafter of the Yamada application, that “[t]he transitional term ‘comprising’ . . . is inclusive or open-ended and does not exclude additional, unrecited elements or method steps” (MPEP § 2111.03). Thus, according to Yamada, p-electrode 12 may further comprise further material which renders p-electrode 12 not to be thinner than pad electrode 14.. Second, even if, contrary to the language used in Yamada, the term “comprising” were to be read as “consisting of,” the lack of Ti in p-electrode 12 does not necessarily mean that p-electrode 12 is thinner than pad electrode 14. The Office Action speculates that this *might* or *could* be the

case, but it is clearly not disclosed, expressly or inherently, by Yamada, which is silent regarding the thickness of p-electrode 12. Thus, Yamada fails to anticipate claims 27 and 28.

Further, claims 27 and 28 each recite that “the first electrode . . . is so formed as to extend to both stripe-direction ends of the ridge while covering at least an entire area of the top face thereof.” Page 2 of the Office Action asserts that “Yamada discloses . . . electrode 12 covers the entire top surface of the ridge,” citing Yamada, FIG. 2. However, according to Yamada, paragraph [0022], “FIG. 2 is a sectional view” (*emphasis added*). Based on FIG. 2, it is impossible to conclude Yamada discloses that p-electrode 12 “cover[s] at least an entire area of the top face” of the ridge, as recited in claims 27 and 28. Similarly, FIG. 2 does not disclose that p-electrode 12 “is so formed as to extend to both stripe-direction ends of the ridge,” as recited in claims 27 and 28. Yamada is silent as to the extent of p-electrode 12 in the stripe-direction, and does not disclose, expressly or inherently (*i.e.*, necessarily), that “the first electrode . . . is so formed as to extend to both stripe-direction ends of the ridge while covering at least an entire area of the top face thereof.” Thus, Yamada further fails to anticipate claims 27 and 28.

Additionally, claims 27 and 28 each recite

the second electrode is formed at a given distance away from both stripe-direction ends of the ridge and at a given distance away from both width-direction ends, the width-direction intersecting the stripe-direction of the ridge.

In a non-limiting example of the above limitations, FIG. 2 of the present application illustrates an electrode 10, which does not extend to the stripe-direction ends of ridge 6 (corresponding to cleaved facets A1 and A2), nor does it extend to the width-direction ends (corresponding to cleaved facets B1 and B2).

Regarding “the second electrode [being] formed at a given distance away from both stripe-direction ends of the ridge,” page 3 of the Office Action asserts that pad electrode 14 of

Yamada inherently discloses such limitations. However, much as discussed above with respect to p-electrode 12, Yamada only discloses a sectional view of the disclosed device, and is silent as to the extent of pad electrode 14 in the stripe-direction. If, for example, pad electrode 14 is formed along the entire length of underlying striped ridge 8a, it would extend to both stripe-direction ends of the ridge, and fail to provide a “second electrode . . . formed at a given distance away from both stripe-direction ends of the ridge,” as recited in claims 27 and 28, as a distance of zero fails to provide the recited “distance away from” the stripe-direction ends of the ridge. Thus, Yamada fails to disclose a second electrode as recited in claims 27 and 28.

Regarding “the second electrode [being] formed . . . at a given distance away from both width-direction ends,” Yamada, FIG. 2 demonstrates that Yamada fails to disclose the recited limitations. As can be seen in FIG. 2, pad electrode is formed such that it extends all the way to trench 11, or, in other words, to the width-direction end of semiconductor laser device 16. Thus, Yamada expressly fails to disclose a second electrode as recited in claims 27 and 28.

As demonstrated above, there are a number of limitations that Yamada fails to disclose, either expressly or inherently. Thus, Yamada fails to anticipate claims 27 and 28 under 35 U.S.C. § 102. Accordingly, Applicants respectfully request withdrawal of the rejection of independent claims 27 and 28, as well as dependent claims 29-31, which incorporate at least the limitations discussed above.

#### New Claims 40 and 41

At least by virtue of their dependency upon claims 27 and 28, discussed above, new claims 40 and 41 are allowable over the cited art. Further, claims 40 and 41 each recite “a film thickness of the first electrode is equal to or smaller than 100 nm.” As noted previously,

Yamada discloses a thickness of 10000 Å (or 1000 nm) for pad electrode 14, and is entirely silent as to the thickness of p-electrode 12, which the Office Action equates with the recited “first electrode.” Thus, Yamada also fails to disclose that the thickness of p-electrode 12 “is equal to or smaller than 100 nm,” as recited in claims 40 and 41. However, even if, for the sake of argument, p-electrode 12 were to be thinner than pad-electrode 14 (which Yamada does not disclose, as discussed above), Yamada does not suggest, where pad electrode is expressly disclosed as 10000 Å (or 1000 nm) thick, that the thickness of p-electrode 12 would be “equal to or smaller than 100 nm” (*i.e.*, 1000 Å), as recited in claims 40 and 41. Thus, claims 40 and 41 are further distinguished over the cited art. Accordingly, Applicants respectfully allowance of claims 40 and 41.

#### Conclusion

In view of the above remarks, Applicants respectfully submit that the application is in condition for allowance, and respectfully requests the Examiner’s favorable reconsideration as to allowance. The Examiner is invited to contact the Applicants’ representative listed below.

**Application No.: 10/593,102**

To the extent necessary, a petition for an extension of time under 37 C.F.R. § 1.136 is hereby made. Please charge any shortage in fees due in connection with the filing of this paper, including extension of time fees, to Deposit Account 500417 and please credit any excess fees to such deposit account.

Respectfully submitted,

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